

**In the Specification:**

Please replace the specification contained in the English translation with the attached substitute specification. A marked-up copy is also attached.



Refuse Bin

## BACKGROUND OF THE INVENTION

[0001] The present invention relates to a refuse bin.

[0002] A refuse bin is disclosed, for example, in WO 99/24332 (PCT/NL98/00653). In the case of this known refuse bin, the ring which is mentioned, is simply placed onto the edge region of the receptacle. A lid for the refuse bin is fastened in an articulated manner to the ring. Connecting means between the ring and the receptacle are not provided. It is apparent that this does not involve an inner bucket for a refuse container, but rather that the receptacle forms the outer refuse bin itself. The garbage bag is hung over the edge region of the receptacle and is then clamped in place when the ring is placed on to it. In this case, however, the garbage bag protrudes over the edge region, with the result that it can be seen from the outside, in this overhanging region, when the ring is placed on it, which gives the arrangement an unattractive, temporary appearance. Due to the fact that no fixing means are provided for the ring on the edge of the receptacle, there is the risk of the ring slipping down from the receptacle if, for example, the upper region of the refuse bin is inadvertently knocked.

[0003] A refuse bin of the type mentioned has been disclosed, for example, in DE 296 00 285 U1. In this case, the ring body, for fixing the garbage bag in place, can be secured in a latching manner in the upper edge region of the receptacle. However, there is also the disadvantage that the garbage bag remains visible to the outside and therefore gives the arrangement an unattractive appearance.

[0004] US Patent 5 385 259 discloses a refuse bin, in particular for nappies, which has a bucket, a lid and a ring. The ring can be placed onto the upper side of the bucket and fixed in place there. The combination of the ring and lid ensures that the garbage bag, which is situated in the interior of the bucket, is not visible from the outside. However, it is

disadvantageous that it is relatively complicated to fix the ring in place on the bucket and that the garbage bag is only concealed to the outside by the combination of the ring and lid.

**[0005]** It is one object of the present invention to provide a refuse bin of the generic type mentioned at the beginning, in which a secure connection is provided between the ring and the upper edge region of the receptacle, it being possible at the same time for the bag to be fastened in such a manner that it is no longer visible from the outside after the ring is attached.

#### **SUMMARY OF THE INVENTION**

**[0006]** This object is achieved by a novel refuse bin of the generic type mentioned at the beginning. According to the invention, the ring, which can be placed onto the upper edge region of the receptacle, is shaped in such a manner that it has two approximately vertical, parallel ring legs, resulting, in principle, in the production of the shape approximately of a downwardly open U-profile in cross section. The ring is placed onto the receptacle in such a manner that the inner ring leg is situated on the inside of the receptacle and the outer ring leg is situated on the outside of the receptacle. However, the ring may also have a more complex cross-sectional shape which differs therefrom and, if appropriate, is based on this basic shape.

**[0007]** According to the invention, the receptacle of the refuse bin is preferably an inner bucket for a refuse container, i.e. that the receptacle is, in turn, placed into a larger receptacle used as the outer container. If, in this preferred variant of the invention, the receptacle is an inner bucket, then it is generally necessary for it to be possible to lift up this inner bucket in order to take it out of the outer container to empty it. Hoops are conventionally used on these inner buckets in order to lift them. One development of the invention makes provision for a hoop to be attached to the ring and to be able to be used to lift up the receptacle.

[0008] One advantage of the invention resides in the fact that the garbage bag can be fastened in such a manner to the receptacle by means of the ring, which can be placed on it that, it is concealed to the outside by the ring. The garbage bag therefore disappears in the region of the gap between the ring and the upper edge region of the container. The garbage bag therefore no longer appears outward from the ring in an overlapping region in an unattractive manner.

[0009] The ring can be secured in a latching manner in the upper edge region of the receptacle by the fact that the ring has at least one, preferably at least two latching regions, in which it can be connected in a frictional and/or form-fitting manner to an upper section of the receptacle. A latching region of this type may, for example, comprise a latching tongue which is resiliently elastic preferably in approximately the radial direction. A latching tongue of this type may, for example, be made resiliently elastic by the fact that the incisions are provided on both sides of the latching region so that the tongue lies freely at the lower end and is therefore somewhat movable approximately in the radial direction. In this case, this latching tongue can be somewhat under prestress in the radial direction because of the stress of the material, and so the latching tongue, when pushed onto the upper edge region, i.e. the latching region of the container, virtually snaps onto the latter.

[0010] One preferred development of the invention makes provision for a step to be formed on the receptacle at a distance below the upper edge. In this case, the latching region of the ring can be snapped over this step when being latched into place. The receptacle preferably has, in the region of the step, an undercut which is situated radially further inward. If the latching region has, in the lower end region, an angled section which is directed radially inward, said angled section can snap over the step into the undercut, thus resulting in a particularly secure connection which prevents the ring from being lifted off upward even if a tensile force is exerted. A tensile force of

this type is exerted if the receptacle is used as an inner bucket and is lifted up at a hoop, which, as has been described above, is attached, for example, to the ring. In one structural solution of the latching connection of the abovementioned type, the entire receptacle can readily be lifted up by means of a hoop which is situated on the ring.

**[0011]** A hoop of this type generally lies horizontally when not in use and is then pivoted up about a horizontal axis if it is desired to lift of the refuse bin, or the receptacle, which is an inner bucket for a refuse container. When not in use, the hoop can be deposited onto parts of the ring. For this purpose, corresponding regions can be integrally formed on the ring, between which the hoop can be deposited. For example, at least partially annular, concentric, upwardly protruding ring ribs can be formed on the upper side of the ring.

**[0012]** As a rule, the outer ring leg is connected to the inner ring leg by a web running at right angles to the latter. When the ring is placed on, this web can rest on the upper edge of the container and can therefore provide a support for the ring and a type of stop when pushing the ring on for the purpose of fastening it on the upper edge region of the receptacle. Moreover, a web-like, approximately horizontal supporting region can be provided, for example, on the ring, which region extends radially further outward, so that, for example, a lid of a refuse bin can be placed on there. When there are two vertical, parallel ring legs, the inner ring leg can be somewhat shorter than the outer ring leg. In this case, the outer ring leg preferably covers the abovementioned step of the receptacle.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

**[0013]** The present invention will be described in greater detail below using exemplary embodiments with reference to the attached drawings, in which

[0014] fig. 1 shows a view of a refuse bin according to the invention;

[0015] fig. 2 shows a longitudinal section through the refuse bin along the line II II from figure 1;

[0016] fig. 3 shows a further longitudinal section through the refuse bin according to the invention along the line III III from figure 2;

[0017] fig. 4 shows a plan view of the refuse bin according to the invention;

[0018] fig. 5 shows an enlarged detail view corresponding to the detail V from figure 2; and

[0019] fig. 6 shows an enlarged detail view corresponding to the detail VI from figure 3.

#### **DETAILED DESCRIPTION OF THE INVENTION**

[0020] Figure 1 shows a refuse bin according to the invention which is referred to in its entirety by the reference number 9. The refuse bin includes a receptacle 11 which, in principle, is largely cylindrical (also see Figure 4) and a ring 10 which is placed onto the upper edge region of this receptacle 11. The receptacle 11 of the refuse bin is an inner bucket for a refuse container, i.e. the receptacle 11 is placed into a larger refuse container (not illustrated here). However, the receptacle 11 may, in principle, also be used separately as a refuse bin. In order to take the receptacle 11, i.e. the inner bucket, out of a refuse container or else in order otherwise to lift up the receptacle 11, a hoop 13 is provided which can be seen in figures 2 and 4. In figure 4, this hop 3 is illustrated in the horizontal rest position, in which it is laid down, and the hoop

can be pivoted about a horizontal pivot axis 13a (see figure 4) into a vertical position, so that the receptacle 11 can be lifted up by the hoop 13 being grasped.

**[0021]** The ring 10, which can be placed in a latching manner onto the upper edge region of the receptacle 11 and can be secured to the receptacle 11, will now be described in greater detail below with reference to figures 2 to 6. It can be seen from figure 6 that the ring 10 is, in principle, a ring which is approximately U-shaped in cross section in its basic shape, is open downward and has two vertical, parallel ring legs 10a, 10b which are connected by a web 10c which connects them and runs at right angles to them. When the ring 10 is latched onto the receptacle 11, the web 10c rests, as can be seen in figure 5, on the upper edge of the receptacle 11. In order to increase the stability of the arrangement, the distance of the ring legs 10a, 10b from the upper edge of the receptacle 11 is smaller than the length of the ring legs 10a, 10b. An outwardly protruding formation which forms a horizontal supporting region 21 is situated on the ring 10 level with the web 10c, so that a lid of a refuse bin (not illustrated in figure 5) can rest there. It can be seen from figure 6 that the outer ring leg 10a is longer and therefore, when the ring 10 is placed thereon, the inner ring leg 10b is situated on the inside of the receptacle 11 while the outer ring leg 10a is situated on the outside of the receptacle 11.

**[0022]** It can be seen from figures 5 and 6 and, in particular, also from the plan view according to figure 4 that two at least partially annular, concentric, upwardly protruding ring ribs 19, 20 are formed on the upper side of the ring 10, so that, in the rest position, the hoop 13 can be deposited between these ring ribs. This can also be seen in figures 5 and 6.

**[0023]** It can be seen from figure 1 that the ring 10 comprises at least one latching region 14 in the form of a tongue which is of resiliently elastic design in approximately the radial direction, with incisions 15 being situated in each case

laterally next to this elastic tongue 14 of the latching region. This resiliently elastic tongue 14 can be seen in the enlarged section illustration according to figure 5. As can be seen, the ring 10 is designed in cross section in the region of this tongue 14 in such a manner that a radially inwardly directed angled section 18 is situated in the lower end region of the tongue. A step 16 is situated on the receptacle 11 approximately in the lower end region of the tongue 14, the upper section 11a of the receptacle which lies above said step protruding radially outward, so that the cross section in this region 11a is somewhat enlarged in comparison to the rest of the receptacle 11. In addition, the step 16 forms a small projection downward, so that an undercut 17 is situated there on the receptacle behind the step 16. If the resilient tongue 14, which is under radial spring stress, is now pushed onto the upper edge region 11a of the receptacle when the ring 10 is placed on, then the lower end region of the tongue latches with the radially inwardly directed angled section 18 over the step 16 of the receptacle into the undercut 17, thus producing a snap-in connection. Owing to the fact that the angled section 18 runs horizontally and grips below the step 16, this connection is frictional and is such that the ring 10 cannot be lifted off even if the hoop 13 is lifted up therefore carries the weight of the refuse container. The connection of the ring 10 placed on the receptacle 11 to the receptacle 11 via the resilient latching tongue 14 is, firstly, a form-fitting latching connection (see figure 5) and is also a secure, frictional connection. A plurality of resiliently elastic tongues 14 of this type can be distributed over the circumference of the ring 10 (see figure 2). As can be seen from figure 6, the outer ring leg 10a is pulled downward to such an extent that it extends downward beyond the step 16 of the receptacle 11 and therefore covers the latter as seen from the outside. According to figures 5 and 6, in the state in which it is deposited on the ring the hoop 13 lies between the two concentric, upwardly protruding ring ribs 19, 20. The elasticity

of the resiliently elastic tongue 14 is ensured, in particular, by the incisions 15 illustrated in figure 1, so that the tongue 14 (or the tongues) is connected only via narrower, upper regions to the material of the rest of the ring 10. The fitting of the ring 10 onto the receptacle 11 is extremely simple, since it suffices to place the ring 10 on from above and push it downward until the angled section 18 of the tongue 14 springs over the step 16 and the snap-in connection is produced.

**[0024]** The position of the garbage bag 12 which is inserted into the receptacle 11 and is clamped by means of the ring 10 can be seen from figs 5 and 6.